

## AMENDMENT TO THE CLAIMS

1. (Original) A circuit for performing a voltage level translation, said circuit comprising:

a transistor circuitry for receiving an input signal for translating a signal from a first voltage range to a second voltage range; and

a first one-shot and a second one-shot operatively coupled to said transistor circuitry, said first and second one-shots to provide at least one pulse for translating said input signal from said first voltage range to said second voltage range.

2. (Currently Amended) The circuit of claim 1, wherein said transistor circuitry further comprises a voltage level translator, comprising:

a first transistor operatively coupled to said input signal, said input signal being in said first voltage range, wherein said first one-shot [[circuit]] is being driven by said first transistor;

a second transistor to receive a complementary signal of said [[control]] input signal, said second transistor to drive a second one-shot [[circuit]] to provide a second pulse; and

a first pair and a second pair of transistors, each pair being operatively coupled to said first and second transistors, said first and second pairs of transistors to provide a transition of a signal from [[a]] said first voltage range to [[a]] said second voltage range.

3. (Original) The circuit of claim 2, wherein said first voltage range relates to a voltage of  $V_{CC}$  to ground.

4. (Original) The circuit of claim 2, wherein said second voltage range relates to a voltage of  $V_{CC}$  to  $V_{BB}$ .

5. (Original) The circuit of claim 2, wherein said voltage level translator is a negative voltage translator.

6. (Original) The circuit of claim 5, wherein said first and second transistors are P-channel transistors.

7. (Currently amended) The circuit of claim 6, wherein the ~~[[drain]]~~ source terminals of said first and second transistors are coupled to  $V_{CC}$ .

8. (Original) The circuit of claim 5, wherein said first pair of transistors are N-channel transistors.

9. (Original) The circuit of claim 6, wherein the source terminals of said first pair of transistors are respectively coupled to said drain terminals of said first and second transistors.

10. (Original) The circuit of claim 9, wherein the drain terminals of said second pair of transistors are respectively coupled to the source terminals of said first pair of transistors.

11. (Currently amended) The circuit of claim 6, wherein said source terminals of said second pair of transistors are coupled to ~~[[said]]~~ a second voltage level relating to said second voltage range, said second pair of transistors being N-channel transistors.

12. (Currently amended) The circuit of claim ~~[[6]]~~ 11, wherein said second voltage level is  $V_{BB}$ .

13. (Currently amended) The circuit of claim 6, wherein ~~[[said]]~~ a first voltage level relating to said first voltage level is ground.

14. (Original) The circuit of claim 6, wherein said first and second one-shots each provide a low-going pulse.

15. (Currently amended) The circuit of claim 2, wherein said first one-shot further comprises:

a first inverter to receive a first control signal from said first transistor;

a second inverter operatively coupled to said first inverter;

a first N-channel transistor comprising a well tie to ~~[[said]]~~ a second voltage level~~[[, the source terminal of said first N-channel transistor being coupled to said first control signal]]~~; and

a second N-channel transistor comprising a well tie to said second voltage level, said second N-channel transistor being coupled with said first P-channel transistor, the gate of said second N-channel transistor being coupled to said input signal.

16. (Currently Amended) The circuit of claim ~~[[2]]~~ 15, wherein said second one-shot further comprises:

a third inverter to receive a first control signal from said first transistor;

a fourth inverter operatively coupled to said third inverter;

a third N-channel transistor comprising a well tie to ~~[[said]]~~ a second voltage level, the source terminal of said ~~[[first]]~~ third N-channel transistor being coupled to said first control signal; and

a fourth N-channel transistor comprising a well tie to said second voltage level, said fourth N-channel transistor being coupled with said third N-channel transistor, the gate of said fourth N-channel transistor being coupled to said ~~[[a]]~~ complement of said input signal.

17. (Original) The circuit of claim 16, wherein said second one-shot provides an output signal that is in said second voltage range.

18. (Original) The circuit of claim 2, wherein said first and second transistors are N-channel transistors.

19. (Original) The circuit of claim 18, wherein said first and second pair of transistors are P-channel transistors.

20. (Original) The circuit of claim 19, wherein said first and second one-shots each provide a high-going pulse.

21. (Original) A voltage level translator, comprising:

a first transistor operatively coupled to a control signal, said control signal being in a first voltage range;

a first one-shot circuit driven by said first transistor, said first one-shot circuit to provide a pulse;

a second transistor to receive a complementary signal of said control signal;  
a first pair and a second pair of transistors, each pair being operatively coupled to said first and second transistors, said first and second pairs of transistors to provide a transition of a signal from a first voltage range to a second voltage range.

22. (Original) The voltage level translator of claim 21, wherein said first voltage range relates to a voltage of  $V_{CC}$  to ground.

23. (Original) The voltage level translator of claim 21, wherein said second voltage range relates to a voltage of  $V_{CC}$  to  $V_{BB}$ .

24. (Original) The voltage level translator of claim 21, wherein said voltage level translator is a negative voltage translator.

25. (Original) The voltage level translator of claim 21, wherein said first and second transistors are P-channel transistors.

26. (Currently Amended) The [[circuit]] voltage level translator of claim 21, wherein said first and second pair of transistors are N-channel transistors.

27. (Currently Amended) The [[circuit]] voltage level translator of claim [[6]] 26, wherein said a second voltage level relating to said second voltage range is  $V_{BB}$ .

28. (Currently Amended) The [[circuit]] voltage level translator of claim [[6]] 26, wherein said a first voltage level relating to said first voltage range is ground.

29. (Currently Amended) The [[circuit]] voltage level translator of claim [[6]] 26, wherein said first and second [[one-shots]] one-shot circuits each provide a low-going pulse.

30. (Currently Amended) The [[circuit]] voltage level translator of claim [[2]] 27, wherein said first one-shot further comprises:

- a first inverter to receive a first control signal from said first transistor;
- a second inverter operatively coupled to said first inverter;
- a first N-channel transistor comprising a well tie to [[said]] a second voltage level[[, the source terminal of said first N-channel transistor being coupled to said first control signal]]; and
- a second N-channel transistor comprising a well tie to said second voltage level, said second N-channel transistor being coupled with said first N-channel transistor, the gate of said second N-channel transistor being coupled to said input signal.

31. (Currently Amended) The [[circuit]] voltage level translator of claim [[2]] 30, wherein said second one-shot further comprises:

- a third inverter to receive a first control signal from said first transistor;
- a fourth inverter operatively coupled to said third inverter;
- a third N-channel transistor comprising a well tie to [[said]] a second voltage level, the source terminal of said [[first]] third N-channel transistor being coupled to said first control signal; and
- a fourth N-channel transistor comprising a well tie to said second voltage level, said fourth N-channel transistor being coupled with said third N-channel transistor, the

gate of said fourth N-channel transistor being coupled to said [[a]] complement of said input signal.

32. (Original) A system board, comprising:

a processor;

a memory device operatively coupled to said processor, said memory device comprising a voltage translator circuit, said voltage translator circuit comprising:

a transistor circuitry for receiving an input signal for translating a signal from a first voltage range to a second voltage range; and

a first and second one-shots operatively coupled to said transistor circuitry, said first and second one-shots to provide at least one pulse for translating said input signal from said first voltage range to said second voltage range.

33. (Currently Amended) The system board of claim 32, wherein said transistor circuitry further comprises a voltage level translator, comprising:

a first transistor operatively coupled to said input signal, said input signal being in said first voltage range, wherein said first one-shot [[circuit]] is being driven by said first transistor;

a second transistor to receive a complementary signal of said [[control]] input signal, said second transistor to drive a second one-shot [[circuit]] to provide a second pulse; and

a first pair and a second pair of transistors, each pair being operatively coupled to said first and second transistors, said first and second pairs of transistors to provide a transition of a signal from [[a]] said first voltage range to [[a]] said second voltage range.

34. (Original) The system board of claim 33, wherein said first voltage range relates to a voltage of  $V_{CC}$  to Ground.

35. (Original) The system board of claim 33, wherein said second voltage range relates to a voltage of  $V_{CC}$  to  $V_{BB}$ .

36. (Currently Amended) The system board of claim 33, wherein said first one-shot further comprises:

a first inverter to receive a first control signal from said first transistor;

a second inverter operatively coupled to said first inverter;

a first N-channel transistor comprising a well tie to [[said]] a second voltage level[[, the source terminal of said first N-channel transistor being coupled to said first control signal]]; and

a second N-channel transistor comprising a well tie to said second voltage level, said second N-channel transistor being coupled with said first N-channel transistor, the gate of said second N-channel transistor being coupled to said input signal.

37. (Currently Amended) The system board of claim [[33]] 36, wherein said second one-shot further comprises:



a third inverter to receive a first control signal from said first transistor;

a fourth inverter operatively coupled to said third inverter;

a third N-channel transistor comprising a well tie to [[said]] a second voltage level, the source terminal of said [[first]] third N-channel transistor being coupled to said first control signal; and

a fourth N-channel transistor comprising a well tie to said second voltage level, said fourth N-channel transistor being coupled with said third N-channel transistor, the gate of said fourth N-channel transistor being coupled to said [[a]] complement of said input signal.

38. (Original) The system board of claim 32, wherein said system board comprises a printed circuit board.

39. (Original) A method for performing a voltage translation of a signal, comprising:

providing a transistor circuitry for receiving an input signal for translating a signal from a first voltage range to a second voltage range; and

providing a first and a second one-shot operatively coupled to said transistor circuitry, providing at least one pulse for translating said input signal from said first voltage range to said second voltage range.

40. (Original) The method of claim 39, further comprising activating said first one-shot using said input signal.

41. (Original) The method of claim 39, further comprising activating said second one-shot to produce an output signal in said second voltage range.

42. (Original) A memory device comprising a voltage translator circuit, said voltage translator circuit comprising:

- a transistor circuitry for receiving an input signal for translating a signal from a first voltage range to a second voltage range; and
- a first and second one-shots operatively coupled to said transistor circuitry, said first and second one-shots to provide at least one pulse for translating said input signal from said first voltage range to said second voltage range.

43. (Original) The memory device of claim 42, wherein said transistor circuitry further comprises:

- a first transistor operatively coupled to said input signal, said input signal being in said first voltage range, wherein said first one-shot circuit is being driven by said first transistor;
- a second transistor to receive a complementary signal of said control signal, said second transistor to drive a second one-shot circuit to provide a second pulse; and
- a first pair and a second pair of transistors, each pair being operatively coupled to said first and second transistors, said first and second pairs of transistors to provide a transition of a signal from a first voltage range to a second voltage range.

44. (Original) The memory device of claim 43, wherein said first voltage range relates to a voltage of  $V_{CC}$  to Ground.

45. (Original) The memory device of claim 44, wherein said second voltage range relates to a voltage of  $V_{CC}$  to  $V_{BB}$ .

46. (Currently Amended) The memory device of claim 42, wherein said first one-shot further comprises:

- a first inverter to receive a first control signal from said first transistor;
- a second inverter operatively coupled to said first inverter;
- a first N-channel transistor comprising a well tie to ~~[[said]]~~ a second voltage level~~[[, the source terminal of said first N-channel transistor being coupled to said first control signal]]~~; and
- a second N-channel transistor comprising a well tie to said second voltage level, said second N-channel transistor being coupled with said first N-channel transistor, the gate of said second N-channel transistor being coupled to said input signal.

47. (Currently Amended) The memory device of claim 42, wherein said second one-shot further comprises:

- a third inverter to receive a first control signal from said first transistor;
- a fourth inverter operatively coupled to said third inverter;
- a third N-channel transistor comprising a well tie to ~~[[said]]~~ a second voltage level, the source terminal of said ~~[[first]]~~ third N-channel transistor being coupled to said first control signal; and
- a fourth N-channel transistor comprising a well tie to said second voltage level, said fourth N-channel transistor being coupled with said third N-channel transistor, the

gate of said fourth N-channel transistor being coupled to said  $\overline{[a]}$  complement of said input signal.

48. (New) A circuit for performing a voltage level translation, said circuit comprising:

a transistor circuitry for receiving an input signal for translating a signal from a first voltage range to a second voltage range;

a first pulse generator to provide a first pulse;

a second pulse generator to provide a second pulse;

wherein said first and second pulse to and a second one-shot operatively coupled to said transistor circuitry, at least one of said first pulse and said second pulse to be used to translate said input signal from said first voltage range to said second voltage range.

49. (New) The circuit of claim 48, wherein said first pulse generator is a first one-shot and the second pulse generator is a second one-shot.

50. (New) The circuit of claim 49, wherein said transistor circuitry further comprises a voltage level translator, comprising:

a first transistor operatively coupled to said input signal, said input signal being in said first voltage range, wherein said first pulse generator is driven by said first transistor;

a second transistor to receive a complementary signal of said control signal, said second transistor to drive said second pulse generator to provide a second pulse; and

a first pair and a second pair of transistors, each pair respectively being operatively coupled to said first and second transistors, said first and second pairs of transistors to provide a transition of a signal from a first voltage range to a second voltage range.